

Wildlife and Washington Administrative Code (WAC) 220-110-020(57). The OHWM is located by examining the bed and bank physical characteristics and vegetation to ascertain the water elevation for mean annual floods. Areas meeting the definition were determined to be the OHWM and flagged (see illustrations at the end of this chapter).

Findings

The Cedar River and two wetlands are located in the vicinity of the project. Both wetlands are narrow riverine class wetlands along the north bank of the Cedar River.

River

The Cedar River is a one of the major rivers in the Puget Sound region. It is a wide, high-volume stream that is utilized by numerous resident and anadromous fish species.

Wetland A

Wetland A (see Photos 3-4 and 3-5) is a riparian fringe wetland that contains red alder, Sitka willow, Douglas spirea, salmonberry, small-flowered bulrush, scouring rush, hard-stem bulrush, creeping buttercup, and field grasses. Wetland soils are very dark grayish brown (10YR3/2) sandy silt with distinct, bright redoximorphic features (RMF). At the time of wetland delineation, soils were saturated, but free water was not observed in any of the examined soil pits.

Wetland B

Wetland B (see Photos 3-6 and 3-7) is a riparian fringe wetland downstream of Wetland A. Cascara, Pacific ninebark, snowberry, salmonberry, red osier dogwood, Pacific dewberry, small-flowered bulrush, and giant horsetail characterize the vegetation in Wetland B. Soils within the wetland are very dark grayish brown (2.5Y3/2) sandy loam with dark yellowish brown RMF. Soils were saturated beginning 6 inches below the soil surface at the time of the site investigation.

Non-Wetland Areas

Undeveloped non-wetland areas of the site consist of second-growth Douglas fir, western red cedar, western hemlock and big-leaf maple with an understory of vine maple, sword fern, bracken fern, Pacific dewberry, and salal. Some ornamental plantings such as Japanese cedar and cotoneaster are located in Landsburg Park near the bank of the Cedar River. The study area contains some locally dominant patches of English ivy and Himalayan blackberry, but is generally free from widespread invasive weed infestations. Non-wetland soils range from a dark yellowish brown (10YR4/6) sandy loam with cobbles to a dark olive brown (2.5Y3/3) sandy loam with no RMF. Non-wetland soils were dry at the time of the site visit.

Two Additional Off-Site Areas

No wetland or stream features were found in the logged area north of the access road (9 Road).

The small area containing hatchery out-buildings on the south river bank just west of the dam contains a constructed backwater pond. This pond may be contiguous with some slope wetlands further off-site. Additional screening would be needed to make that determination. A prior delineation, conducted by ESA Adolfson, appears to cover this off-site area, but that delineation is more than five years old and is no longer valid. The existing hatchery structures are on compacted soils that lack any wetland characteristics.



Photo 3-4. Large Woody Debris in Wetland A Looking Northeast (February 2007)



Photo 3-5. Along the Boundary of Wetland A (February 2007)



Photo 3-6. Wetland B (November 2009)

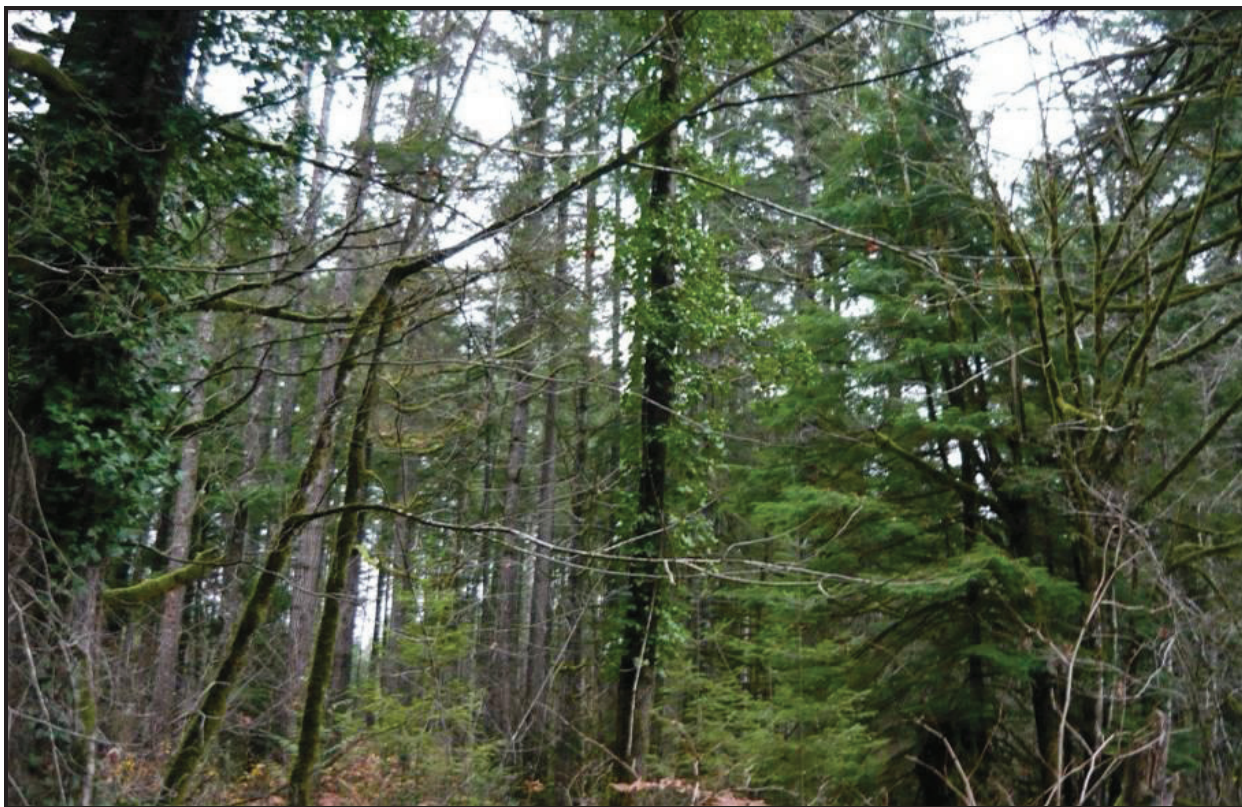


Photo 3-7. Buffer of Wetland B (November 2009)

Mitigation Opportunities and Restrictions

Any plan that would impact critical areas, including wetlands, streams, their associated buffers or shoreline jurisdiction areas, must include a record of previously permitted impacts and associated mitigation. Previously a mitigation plan was approved by King County for development of a sockeye hatchery adjacent to the north shore of the Cedar River within the stream buffer and shoreline jurisdictional area north of Wetland A. The approved plan includes 5,199 square feet of buffer addition and 1,469 square feet of buffer enhancement.

Once the extent and location of proposed impacts are known, specific recommendations can be made. In general, beyond the limits of cleared or developed sites, the native forest is in relatively good condition and could be preserved. Some localized patches of invasive weedy species, such as non-native blackberry and ivy, could be reclaimed with native plants. The riparian corridor beyond the dam facilities is densely vegetated with trees and shrubs. There is a break in vegetation on the north bank within Landsburg Park where kayakers enter the river.

SUNLIGHT

The Landsburg site is a naturally forested area in the western foothills of the Cascade Mountains. For most of the year this area experiences misty conditions. Because the site is adjacent to the Cedar River, it is likely to experience low-lying fog and clouds. Clear skies and sunshine are most common on very cold winter days and during the warmer summer months. The forest canopy is largely made up of evergreens, so a dark environment is common, particularly in winter. Non-forested areas at the site include the open field at Landsburg Park, an area surrounding the lower garage, the clear-cut spoils/staging area north of the 9 Road, the open area east of the dam/treatment area and the partially open area adjacent to the north side of the river. Facing south, some areas adjacent to the north bank of the river have the greatest sun exposure, although stands of evergreens do cast shadows.

Tetra Tech investigated the potential for the use of photovoltaic panels at Landsburg for energy production. The best sites are the screen house facility and the dam. While the screen house does not have the ideal orientation to the path of the sun, simulations revealed that photovoltaic panels with the same orientation as the building would be 98-percent effective. Because the screen house sits on the river's edge and adjacent to the dam, it is not highly susceptible to shading from the tree canopy. The screen house roof may be of sufficient size for photovoltaic panels to achieve a net zero annual energy consumption for the new facility should it be constructed as a high performance building. The NOAA satellite image with winter solstice sun data superimposed in Figure 3-6 shows the favorable orientation of the screen house roof for capturing solar energy during the shortest day of the year.